

WHAT IS CLAIMED IS:

1. A solid-state image pickup apparatus, comprising:  
an XY address type solid-state image pickup element in  
5 which pixels are arranged in a matrix and color filters  
having a predetermined color coding are formed for the  
respective pixels;

frequency changing means for changing a clock  
frequency of a system when thinning-out read is specified  
10 for the solid-state image pickup element; and

driving means for selecting the pixels on the basis  
of the clock frequency changed by the frequency changing  
means and in a sequence corresponding to the color coding  
to read out pixel signals.

15 2. The solid-state image pickup apparatus as recited in  
claim 1, wherein:

the color coding is repetition of a unit, the unit  
being made of two rows and two columns; and

the driving means successively reads out the pixel  
20 signals every third pixel in both a row direction and a  
column direction.

3. The solid-state image pickup apparatus as recited in  
claim 1, wherein:

the color coding is repetition of a unit, the unit  
25 being made of two rows and two columns; and

the driving means successively reads out the pixel  
signals every other unit, the unit being made of two rows  
and two columns, in both a row direction and a column  
direction.

30 4. The solid-state image pickup apparatus as recited in  
claim 1, wherein:

the color coding is repetition of a unit, the unit  
being made of two rows and two columns, and

four, 2 ( 2, units, each unit being made of two rows and two columns, are integrated, and the driving means successively reads out an addition signal of lower left pixels in the units, an addition signal of lower right pixels, an addition signal of upper left pixels, and an addition signal of upper right pixels.

5. The solid-state image pickup apparatus as recited in claim 1, wherein:

the color coding has a same color in a same column and has repetition of three colors in a row direction, and

the driving means successively reads out the pixel signals every other pixel in both a row direction and a column direction.

6. A solid-state image pickup apparatus, comprising: an XY address type solid-state image pickup element in which pixels are arranged in a matrix and color filters having a predetermined color coding are formed for the respective pixels; and

driving means for selecting only specific pixels to keep an arrangement sequence of the color coding and for reading out pixel signals when thinning-out read is specified for the solid-state image pickup element.

7. A solid-state image pickup apparatus, comprising: an XY address type solid-state image pickup element in which pixels are arranged in a matrix and color filters having a predetermined color coding are formed for the respective pixels; and

driving means for performing readout by selecting a plurality of pixels in which at least one pixel is not adjacent to the other pixels and adding a pixel signal corresponding to each of the plurality of pixels.

8. A method of driving a solid-state image pickup apparatus using an XY address type solid-state image

pickup element in which pixels are arranged in a matrix and color filters having a predetermined color coding are formed for the respective pixels, comprising the steps of:

changing a clock frequency of a system when thinning-out read is specified for the solid-state image pickup element; and

reading out pixel signals by selecting the pixels on the basis of the changed clock frequency and in a sequence corresponding to the color coding.

9. The method of driving the solid-state image pickup apparatus as recited in claim 8, wherein:  
the color coding is repetition of a unit, the unit being made of two rows and two columns; and

the pixel signals are successively read out every third pixel in both a row direction and a column direction.

10. The method of driving the solid-state image pickup apparatus as recited in claim 8, wherein:

the color coding is repetition of a unit, the unit being made of two rows and two columns; and

the pixel signals are successively read out every other unit, the unit being made of two rows and two columns, in both a row direction and a column direction.

11. The method of driving the solid-state image pickup apparatus as recited in claim 8, wherein:

the color coding is repetition of a unit, the unit being made of two rows and two columns, and

four,  $2 \times 2$ , units, each unit being made of two rows and two columns, are integrated, and an addition signal of lower left pixels in the units, an addition signal of lower right pixels, an addition signal of upper left pixels, and an addition signal of upper right pixels are successively read out.

12. The method of driving the solid-state image pickup apparatus as recited in claim 8, wherein:

the color coding has a same color in a same column and has repetition of three colors in a row direction, and

5 the pixel signals are successively read out every other pixel in both a row direction and a column direction.

13. A camera system, comprising:

an XY address type solid-state image pickup element  
10 in which pixels are arranged in a matrix and color filters having a predetermined color coding are formed for the respective pixels;

operation mode setting means for selectively setting an all-pixel read mode and a thinning-out read mode to the  
15 solid-state image pickup element;

frequency changing means for changing a clock frequency of a system when the thinning-out read mode is set;

driving means for reading out pixel signals by selecting the pixels on the basis of the clock frequency changed by the frequency changing means and in a sequence corresponding to the color coding when the thinning-out read mode is set; and

20 signal processing means for processing an output signal of the solid-state image pickup element on the basis of the clock frequency changed by the frequency changing means when the thinning-out read mode is set.